



May 18, 2018

***Via U.S. Mail, Electronic Comments Submission, and Email***

Golden Peak Draft EIS  
Scott Fitzwilliams  
c/o Max Forgensi  
Mountain Sports/Special Uses Administrator  
White River National Forest  
P.O. Box 190  
Minturn, CO 81645

Re: Golden Peak Improvements Project DEIS

Dear Supervisor Fitzwilliams:

I am the President of the Board of Directors of the Northwoods Condominium Association ("Northwoods"). Northwoods is the association that represents the owners of the Northwoods condominiums located at 600 Vail Valley Drive, Vail, Colorado. I have been authorized by the Board to submit these comments on behalf of Northwoods regarding the Golden Peak Improvements Project ("Project") Draft Environmental Impact Statement, No. 20180057, dated March 2018 ("DEIS").

Northwoods is primarily concerned about the proposed action's current plans and unknown future plans for the drainage management system for the Project. Northwoods is located directly north of, and downslope from, the proposed mogul course. Northwoods requested CTL/Thompson Inc., an engineering firm located in Glenwood Springs, Colorado, to review the DEIS and relevant, associated technical reports. CTL/Thompson's report to Northwoods is attached and incorporated in full here by reference as the comments of Northwoods. CTL/Thompson's report speaks for itself; however, certain points will be reiterated or added in this cover letter.

The Forest Service should proceed now to perform the analysis and develop the many plans it proposes for the future, as discussed below, and



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circulate a supplemental DEIS that fully informs Northwoods and the public of the full scope and environmental effects of the Project. 40 C.F.R. § 1502.9(c)(4).

### **Section 1.2—Relationship to Previous Analyses and Approvals**

This section references the “development *and implementation* of a drainage management plan and slope stability analysis, contained in the project file as Water Resources Specialist Report.” (Emphasis added.) If this drainage management plan has already been implemented subsequent to the 2009 ROD, please indicate the NEPA analysis that accompanied that major federal action. If this quoted passage refers to the plan that is Attachment E to the Water Resources Specialist Report, then the language in this section is misleading where it states that previous concerns have been “subsequently addressed” through the implementation of that plan and analysis. The plan and analysis is merely a part of the Forest Service’s proposed action, has not been adopted in a Record of Decision, and has not been implemented on the ground.

#### **Section 1.7.1.2- Biological Environment**

This section states (here and repeatedly throughout the DEIS) that the proposed ground disturbance and snowmaking may contribute to increased rates of erosion and slope hazards and that water quantity impacts may potentially occur “within the SUP area.” See the attached CTL/Thompson report regarding concerns related to geology, soils, and water resources including impacts inside, and particularly outside, the SUP area as it relates to the location of Northwoods north and below the proposed mogul course.

### **Section 2.3—Alternatives Considered in Detail**

The DEIS suffers from a lack of a reasonable range of alternatives. In addition to the statutorily required “no action” alternative, there is only one action alternative. NEPA requires that an FEIS contain a reasonable range of alternatives. The alternatives are actually alternatives to the proposed action. See NEPA § 102(2)(E). There are no action alternatives to the proposed action;



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therefore there is no range of action alternatives. The additional analysis suggested by CTL/Thompson presents information that is appropriate as supplementation to the proposed action in a supplement DEIS and that could be incorporated into another action alternative as appropriate. *See also* NEPA § 102(2)(C)(iii); 40 C.F.R. § 1502.14(a).

#### **Section 2.4—Project Design Criteria Incorporated Into Action Alternative**

Table 2-1, Planning, states that Vail Mountain Report “will prepare the following plans for Forest Service review: . . . (2) Stormwater Erosion Control and Drainage Management.” Is this drainage plan different from or the same as the previously-referenced Drainage Management Plan that is Attachment E to the Water Resources Specialist Report? It is unclear to the reader if there is a separate plan not contained in that report that needs to be provided to the public through a supplemental DEIS. If the stormwater drainage management plan is released only after the final EIS and Record of Decision, it raises concerns regarding segmentation of the analysis of connected actions under NEPA. Connected actions are those actions that are closely related and should be discussed in the same NEPA document. *See* 40 C.F.R. § 1508.25(a)(1). Failing to discuss connected actions can result in illegal segmentation of the analysis. A plan not reviewed by the public in the DEIS would constitute new circumstances or information that are significant to the federal action and relevant to the environmental concerns and bearing on the proposed action or its effects. *See* 40 C.F.R. § 1502.9(c)(1)(ii). This additional information could also constitute a substantial change to the proposed action which is also relevant to the environmental concerns. *See* 40 C.F.R. § 1502.9(c)(1)(i). If you add a new alternative that is outside the spectrum of alternatives already analyzed, this further supports supplementation of the DEIS.

Table 2-1 also references the required elements of the Erosion Control and Drainage Management Plan found in Appendix B to the DEIS. That appendix section consists of nothing more than four short bullet points on plan elements that might be included in the plan and does not indicate that the plan has yet been produced. In fact, Appendix B suggests the opposite in that these



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management plans “would be completed pending approval of the Vail Mountain Resort Golden Peak Improvements Project.” Further, Appendix B states these plans will be submitted to the Forest Service for approval in the future. Consequently, Northwoods and the public are unable to evaluate these plans for their environmental impacts, requiring supplementation of the DEIS.

Similarly, Table 2-1, Planning, discusses a “Grading Plan” that will be prepared sometime in the future for the Project. Grading in the Project area could have a significant impact on water drainage and erosion control. Northwoods is unable to fully analyze the impacts of the Golden Peak Improvements Project without having an opportunity to review and analyze the Grading Plan. The Grading Plan should be developed and distributed to the public as part of a supplemental DEIS to avoid segmentation concerns.

Also, Table 2-1, Planning, including discussion of slope movement monitoring protocols as part of the Erosion Control and Drainage Management Plan measures that will, at some point in the future, be included in the Stormwater Management Plan for the Project. These slope movement monitoring protocols will be developed in the future by an unnamed entity in coordination with the Forest Service and implemented during construction and post-construction monitoring. The slope movement monitoring protocols are not required to be part of the Erosion Control and Damage Management Plan according to Appendix B that lists the required elements of that plan. These protocols are essential to the Forest Service’s and the public’s understanding of potential slope movement as a result of the Project that could affect Northwoods and all other human activities downslope from the construction. These protocols should be made a mandatory part of the erosion control plan. Further, these protocols are essential to the protection of human life and real and personal property and could include such concepts as inclinometers and years of post-construction monitoring. The slope movement monitoring protocols should apply outside of the Vail Resorts special use permit area and specifically on steep slopes trending toward Northwoods. Most importantly for purposes of this DEIS, Northwoods is unable to fully evaluate the DEIS because of the absence of these protocols in the document leading to immediate concerns



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about the inadequacy of the DEIS and future concerns about segmentation of the analysis. For this reason, the slope movement monitoring protocol should be fully developed and incorporated into a supplemental DEIS for public review.

Table 2-1, under “Post-Construction,” also calls for monitoring the project area for three years for the presence of invasive plants and successful establishment of desired vegetation. Similarly efforts should be made to monitor over a period of years the slope stability above Northwoods and efficacy of the drainage management to confirm that it is adequate. References made elsewhere in the DEIS to adaptive management should be specifically called out and expanded with regard to implementation of the Drainage Management Plan.

**Table 2-3—Summary Comparison of Direct and Indirect Environmental Consequences**

Under “Geology and Soils Proposed Action,” the following sentence appears:

Two areas northwest and north of the Golden Peak area should be avoided of additional water diversion due to uncertainty if additional water infiltration would occur.

This sentence is grammatically confusing and incapable of understanding and analysis. It may have direct bearing on Northwoods that lies northwest and north of the Golden Peak area. Consequently, the DEIS should be supplemented to expand on this concept so that the reader may fully understand the effects of the ground disturbance and snowmaking and their contribution to increased rates of erosion and slope hazards.

In that same table, under the heading “Water Resources, Proposed Action,” reference is made to new snowmaking that would increase snowmaking water usage by 62 acre feet per ski season and potentially increase runoff. But



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there is no detailed analysis as to the effects of that potential runoff on Northwoods. See CTL/Thompson's report on this issue.

### **Section 3.4—Social and Economic Resources**

The threat of serious to catastrophic consequences to Northwoods from an inadequately designed and constructed drainage management plan decreases the value of the Northwoods condominiums and should be analyzed if no changes are made to the proposed Drainage Management Plan as it exists in the DEIS. Slope instability above Northwoods due to the Project is a major concern negatively affecting Northwoods' economic value. The Northwoods condominiums are very valuable real estate holdings of the condominium owners and it is reasonably foreseeable that a poorly designed or constructed drainage management system could have significant economic impacts on those condominium values. The economic effects should be analyzed in this section.

### **Section 3.6.1—Geology and Soils, Scope of the Analysis**

This section refers to the "Analysis Area" which is defined as 220 acres on National Forest Service lands within Vail Mountain Resort's Special Use Permit area. Consequently, by definition, the Analysis Area does not extend outside of the special use permit area to the north where Northwoods is located. By drawing the Analysis Area too narrowly, the DEIS does not consider the affected environment and environmental consequences of the Project on the geology, slopes, soils, and water drainage at and above Northwoods lying to the north of the special use permit area. The DEIS should be supplemented to include those lands within the Analysis Area for geology, slopes, soils, and water drainage.

### **Section 3.6.4.2—Alternative 2—Proposed Action, Geology**

Here, the DEIS states the two areas northwest and north of the Golden Peak area should be avoided for additional water diversions. Because the Analysis Area does not extend beyond the SUP area, these two unidentified areas northwest and north of Golden Peak are within the SUP. However, this is



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unclear and should be clarified in a supplemental DEIS. The Analysis Area should expand to include Northwoods and the proposed plan for geology should state that it will avoid additional water diversions toward Northwoods as well.

#### **Section 3.6.5.1—Cumulative Effects, Scope of the Analysis**

The cumulative effects temporal and spatial boundaries extend from 1962 to date and include lands at the Vail Mountain Resort, adjacent Forest Service lands, private lands, and lands throughout Eagle County. By definition, this scope of the cumulative effects analysis encompasses Northwoods that was built just north of the Project area in 1978. Yet, nowhere in the cumulative effects analysis is the Northwoods condominium development specifically discussed and analyzed as a past cumulative action. The cumulative effects analysis should analyze any effect that the Northwoods development may have had on the north-facing slope above the development.

#### **Section 3.9.2.3—Hydrologic Conditions**

This section refers to a drainage management plan that has been created to address hydrologic conditions but again it is unclear whether that plan is already in existence, is Attachment E to the Water Resources Specialist Report, or part of the future plan to be established as described in Appendix B. Section 3.9.3.4—Drainage Network— refers to the plan in the Water Resources Specialist Report but the question remains as to what the previous and other references to drainage management plans refer to.

#### **Section 3.9.3.5—Hydrologic Conditions**

Table 3.9-9 states that snowmaking will increase by 25%, annual runoff volume in an average year will increase by 9% and peak flows in an average year will increase by 11%. These increased water volumes all support the concerns raised in the CTL/Thompson report attached and incorporated here by reference.



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**Appendix A—Cumulative Effects Projects**

Appendix A fails to list the development of the 71-unit Northwoods condominium project in 1978, nor is there any discussion of the cumulative effects of that project as a past action on the proposed action of the Forest Service.

Thank you for this opportunity to comment on the Golden Peak Improvements Project DEIS. Northwoods Condominium Association looks forward to your response to these comments and specifically to the development of a supplemental DEIS that addresses the geologic, slopes, soils, and water drainage concerns and other related comments contained in this letter and in the attached CTL/Thompson report incorporated by reference. Additional attachments include the curriculum vitae of John Mechling and James Kellogg, signatories to the CTL/Thompson report.

Sincerely,

Javier De Pedro  
President

Northwoods Condominium Association Board of Directors

Attachments

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May 16, 2018

Northwoods Condominium Association  
600 Vail Valley Drive  
Vail, Colorado 81657

Subject: Engineering Consultation  
Golden Peak Improvements Project  
Vail Ski Area  
Vail, Colorado  
Project No. GS06142.000-145

### **Introduction**

CTL/Thompson, Inc. provided you a letter (dated June 14, 2017) with our observations regarding geologic and geologic hazards observations of the slopes and ski area property above Northwoods Condominiums. Subsequent to our letter, the United States Forest Service (USFS) released the Draft Environmental Impact Statement (DEIS) for the Golden Peak Improvements Project for public comment which we have reviewed. We reviewed pertinent documents within the DEIS (see Documents Reviewed). The document was compiled by SE Group Inc. for Vail Ski Area and the USFS. The Golden Peak Improvements Project will include a new surface lift, Men's Super G, Women's Downhill, mogul and skier cross courses. Lift operating shacks, race start buildings, and maintenance buildings are proposed. Significant tree clearing, and new snowmaking capacity would be required. The planned mogul course would be located above Northwoods Condominiums. Photographs are provided in Appendix A.

### **Summary**

Our current engineering consultation included a review of documents to judge the increase in risk to Northwoods from flooding, mudflow or instability of slopes due to construction of the Golden Peak project above the site. This letter reiterates our interpretation of geology and geologic hazard observations, describes the project documents we reviewed, and discusses our opinions about the impact of the development on geologic hazards that could affect Northwoods. Our concerns regarding the improvement as currently planned include:

- Development that increases runoff towards Northwoods will increase the existing substantial risk of flood, mudflood and mudflow;
- The mogul course is the component of the proposed development that is likely to adversely affect Northwoods. Tree clearing, surface grading



changes, new high-pressure water lines, and additional manmade snow are planned for this project feature. These changes will increase the volume of runoff and potential sediment loads, especially when spring rain events coincide with snowmelt. We believe some of the additional runoff will be towards Northwoods. Increases in subsurface water are also likely to result in this area;

- The geologic hazard evaluation by GEO-HAZ Consulting was limited to relatively large-scale, deep-seated landslides within the project boundaries. Potential for other mechanisms, such as flood, mudflood and mudflow were not evaluated in the DEIS. The extent of the GEO-HAZ report is described in the Executive Summary of their report as "The conceptual goal was to map and analyze any past slope instabilities in the area of the proposed improvements, and in nearby areas where the runoff and infiltration from the improvements would go." The potential of increased risk to Northwoods was not evaluated; and
- Snowmaking operations typically result in concentrated areas of snow, as well as snow stockpiles. This results in a large volume of potential runoff water in spring and summer months. We are concerned about the snow management programs effect on potential runoff that would affect Northwoods.

### **Site Geology**

The Northwoods Condominiums includes 71 residential units in seven wood-framed, multi-level structures situated on gently to moderately sloping ground between the base of a steep, north-facing mountain side and Gore Creek. Vail Ski Area operations have historically been present on the gentler slopes above and generally west of Northwoods. The project is about 40 years old. The south sides of the buildings have narrow landscaped areas that are cut into the hillside. Slopes are retained with multi-tiered, rock-filled wire baskets (gabions). We noted several incised drainages a few to about 10 feet wide that run from inside the existing Special Use Permit area down and off the hillside onto the Northwoods property.

The gentle slopes adjacent to Gore Creek are a bouldery sand and gravel terrace deposit associated with post-glacial deposition and the steeper south portion is underlain by a colluvial soil formed by slope wash from the hill above. The colluvium probably overlies the terrace deposits at the Northwoods Condominiums and covers bedrock above the site.

Geologic mapping of the Vail East Quadrangle (USGS Map MF-2375, 2003) shows the surficial and bedrock geology of the area. The upper part of the



steep slope above the northside include exposed limestone beds from the Pennsylvanian-age Robinson Limestone member of the Minturn Formation. The limestone bedrock forms at least one cliff below the existing buried water tank located above the western Northwoods buildings. Strike and dip measurements shown on the USGS Map indicate the Robinson Limestone strikes about north with a west dip of about 22 degrees. The Minturn Formation contains thick gray limestone beds with softer reddish-brown sandstone, conglomerate and shale lenses between. We noted only limestone outcrops above the Northwoods property.

### **Geologic Hazards**

The natural slope above Northwoods is very steep, nearly 100 percent overall or about 1H:1V, formed by glacial scouring of the Gore Creek Valley in the past one-half million years. This area is largely tree-covered with evidence of erosion and shallow slumps. Slopes on the ski runs to the south average about 40 percent down to the northwest. This slope is about the same as the bedrock dip. We noted man-made drainage swales and partially buried pipes in the area of the ski run and buried water tank, all on the Vail Resort's existing permit area.

From a large-scale perspective, slopes appear to be stable above the Northwoods property. This is largely due to the strength of the limestone bedrock layers. The colluvial soils above the bedrock are erosion-prone and subject to shallow failures that include slumps, as well as mudflood and mudflow. Drainage courses that are currently incised into the slope appear to transport surface flow from the existing Vail Resort permit area toward the Northwoods property.

Development that increases runoff toward Northwoods will increase the existing substantial risk of flood, mudflood and mudflow exposure. These risks can be reduced by careful-management of surface grading and potential construction of subsurface drain systems, but management of these risks is not discussed in the DEIS or associated technical reports. Grading changes that direct ski area runoff west and east of (away from) Northwoods would substantially reduce exposure of the property to these hazards. Combining this approach with interceptor drains would be a positive method to mitigate excessive soil saturation. Again, none of these options is discussed in the DEIS or referenced technical reports.

### **Documents Reviewed**

As part of our engineering analysis for this geotechnical consultation, we reviewed several documents that are part of the DEIS. The documents reviewed are listed below.

1. Geology and Geologic Hazards of the Proposed Golden Peak Race Training Area, Vail Resort, Summit County, Colorado, (Revised Final Report),

NORTHWOODS CONDOMINIUM ASSOCIATION  
NORTHWOODS

PROJECT NO. GS06142.000-145

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GEO-HAZ Consulting, Inc. Job No. 2173, dated January 30, 2018

2. Soils Specialist Report, Vail Ski Resort – Golden Peak Improvements, White River National Forest, Eagle County, Colorado, Buscher Soil & Environmental Consulting, Inc., Western Ecological Resource, Inc., dated December 2017
3. Water Resources Specialist Report, Golden Peak Improvements, Eagle-Holy Cross Ranger District, White River National Forest, Eagle County, Colorado, Leonard Rice Engineers, Inc., dated February 9, 2018

### **GEO-HAZ Consulting Report**

GEO-HAZ prepared the geologic and geotechnical report for Leonard Rice Engineers (LRE) and SE Group Inc. GEO-HAZ characterized the bedrock and surficial geology, re-evaluated past landslide mapping utilizing recent satellite imagery and a field reconnaissance, and evaluated global stability and the potential effect of the planned improvements. This work provided guidance for LRE to develop the drainage management plan.

The major landslide feature evaluated is an existing old landslide deposit referred to as the “Big Slide”. The landslide deposit is located near the center of the improvement project area. The lower part of the east flank and toe of the deposit is just southwest of the planned mogul course. The toe of the landslide deposit is about 1200 feet south of Northwoods. GEO-HAZ determined that tree clearing, additional snowmaking, and building and road construction would not significantly affect the existing stability of the landslide deposit.

The bedrock in the vicinity of the mogul course is described as being the Robinson Limestone member of the Minturn Formation. The surface soils are described as Quaternary colluvium. No areas of unstable slopes were identified by GEO-HAZ in the area of the planned mogul course.

GEO-HAZ did not evaluate the potential effect of the planned tree clearing and increased moisture from snowmaking on the slopes above Northwoods. The mogul course and trail is described as extending northwest down to the crest of a bedrock ridge, which is stable and shows no signs of past slope stability.

### **Western Ecological Resources Report**

The purpose of the soils specialist report by Western Ecological Resources (WER) was to confirm soil types and measure thicknesses of organic and surface soil mineral horizons. Soil types were defined according to the United States Department of Agriculture (USDA) classification system. The soil



within the mogul course area is identified as Map Unit 385D: Scout-Rock out-crop-Hechtman. A characterization of this soil type from the report is shown below.

*Hechtman soils are shallow (less than 20 inches) to bedrock, somewhat excessively drained, and formed in colluvium and residuum from sedimentary rocks of the Minturn Formation. Two descriptions were made of the Hechtman soil (GP3 and GP6). Profile GP6 contained fewer rock fragments than typically occurs in the Hechtman soils. Within the Analysis Area, the Hechtman soils generally have a loam surface layer and below is gravelly or very gravelly loam to bedrock. They have low available water capacity and are strongly acid to moderately acid (pH 5.1 to 6.0). Runoff is rapid and permeability is moderately rapid.*

Evaluation of the soils were limited to the thin mantle of organic and surface mineral horizons. WER judged the soils have a moderate erosion potential.

### **Leonard Rice Engineers Report**

Leonard Rice Engineers (LRE) produced a Water Resources Specialist Report for the Golden Peak Improvements project. The Drainage Management Plan in the report addresses strategies to avoid and minimize potential impacts to areas where there may be slope stability problems. The plan identifies drainage improvements needed to mitigate potential adverse impacts from changes to surface and subsurface water flows. Drainage improvements are mostly concerned with not increasing the water available to the older, deep-seated "Big Slide" features. Drainage improvements related to the mogul course are new water bars, enlargement and improvements to an existing channel and installation of a new culvert. Construction-level details are not provided and the DEIS does not describe the plan.

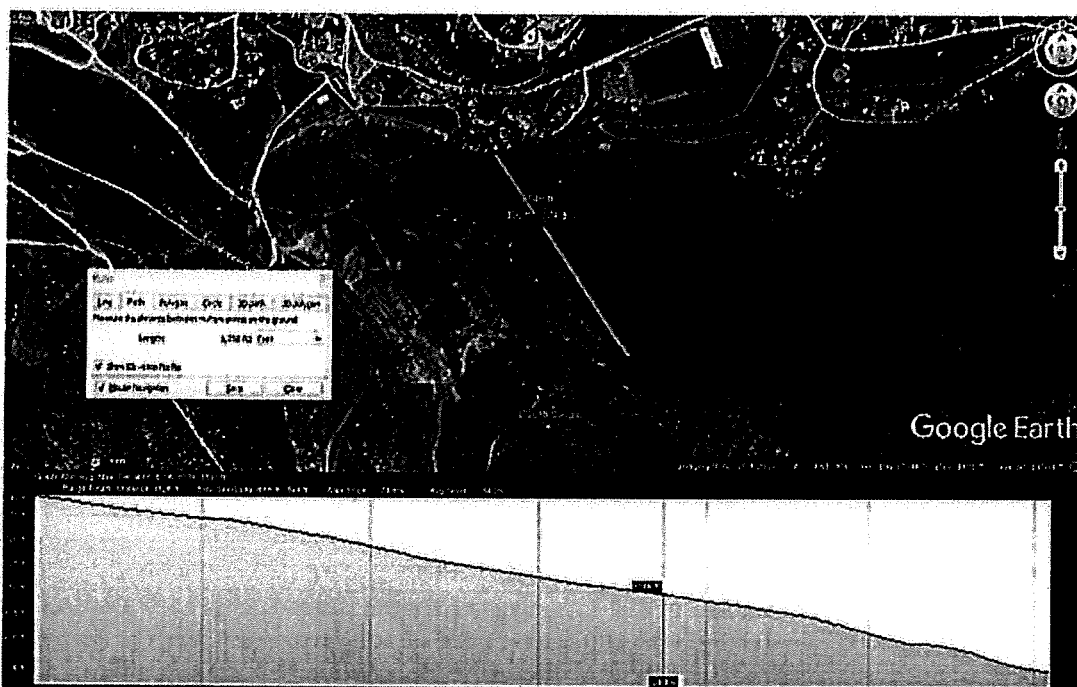
We believe drainage basin GP-2C shown on the plans we reviewed in the LRE report may extend into basin GC-1B and north towards the Town of Vail. Analysis by LRE determined that within drainage basin GP-2C (mogul course) the area covered by snowmaking will change from 7.7 acres to 13.0 acres (59% increase) and water usage will change from 16.5 acre-feet to 24.5 acre-feet (67%). Tree cleared area will change from 18.0 acres to 30.6 acres (59%). LRE in their "Hydrologic Conditions" section of their report state that the above changes will result in increases in total runoff and peak runoff flow.

### **Opinions and Recommendations**

Our document review indicates that the potential volume and flow rate of water directed toward the slopes above Northwoods has not been analyzed in either the DEIS or the associated technical reports. The amount of water and sedi-

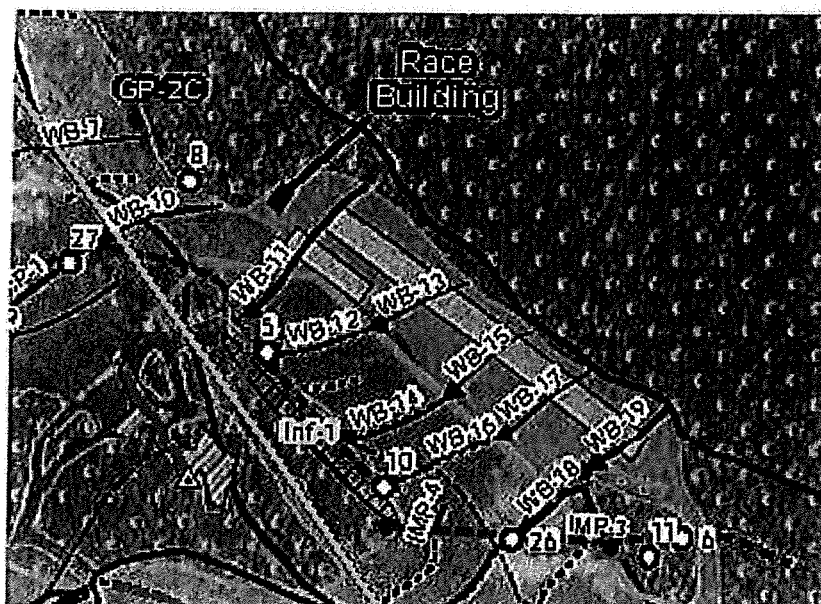


ment loads may be significant, especially if the Golden Peak features are constructed as proposed. A profile of the slope from the bottom of the mogul course to the ridge top above Northwoods is shown below.



This slope profile, generated with Google Earth, indicates that surface and subsurface water at the base of the mogul course is likely to travel to the slopes directly above the Northwoods property. Tree clearing, reshaped surface grades, and additional manmade snow required for the course is likely to increase the amount of surface runoff and subsurface water to the slope directly above Northwoods. This could increase driving forces for slope failures and sediment loads resulting in mudfloods and mudflows.

Drainage improvements related to basin GP-2G and the mogul course are indicated on the figure below taken from the LRE report. New water bars (i.e., ditches) WB-11, WB-13, WB-15, WB-17 and WB-19 are proposed to be built. Existing water bars WB-7, WB-10, WB-12, WB-14 and WB-16 would be improved and enlarged. The existing drainage channel IMP-3 would be enlarged with enhanced erosion control.



The planned drainage improvements are positive, but not designed with the intent of mitigating risk of landslides, mudfloods, and mudflows that could affect Northwoods. Considering that a substantial degree of risk from flooding and mudflow currently exists and mogul course construction could increase the risk, we recommend this risk be evaluated by the Forest Service in a supplemental DEIS. Potential Project Design Criteria or new alternatives may range from not constructing the mogul course, moving of the planned mogul course, or construction of berms, lined detention ponds and subsurface drains, none of which have been analyzed in the DEIS or associated reports.

CTL/Thompson, Inc. provided engineering consultation regarding a mudflow that caused significant damage to a building adjacent to another ski area. A source of water triggering the mudflow was stockpiles of snow remaining from snowmaking operations required for winter sports competitions, including skiing and snowboarding. The additional snow exacerbated natural surface and subsurface water volumes. This combined with a heavy spring rainfall event and contributed to the mudflow. Due to the mudflow, the ski area implemented changes to snow removal and maintenance programs to mitigate the potential for similar mudflow events in the future. We believe it is critical that Vail Resorts develop a plan to manage snowmelt from the mogul course, if it is constructed, and to share that plan in a supplemental DEIS.



We appreciate the opportunity to work with you on this project.  
CTL/Thompson, Inc. is available to discuss the contents of this letter.

Very truly yours,

CTL/THOMPSON, INC.

John Mechling, P.E.  
Senior Principal Engineer

Reviewed By:

James D. Kellogg, P.E.

James D. Kellogg, P.E.  
Division Manager

JM:JDK:at

cc: Via email to [patrick@northwoodsvail.com](mailto:patrick@northwoodsvail.com)





## APPENDIX A

### SITE PHOTOGRAPHS



Buried Water Tank Above Northwoods



Crest of Slope Above Northwoods

NORTHWOODS CONDOMINIUM ASSOCIATION

NORTHWOODS

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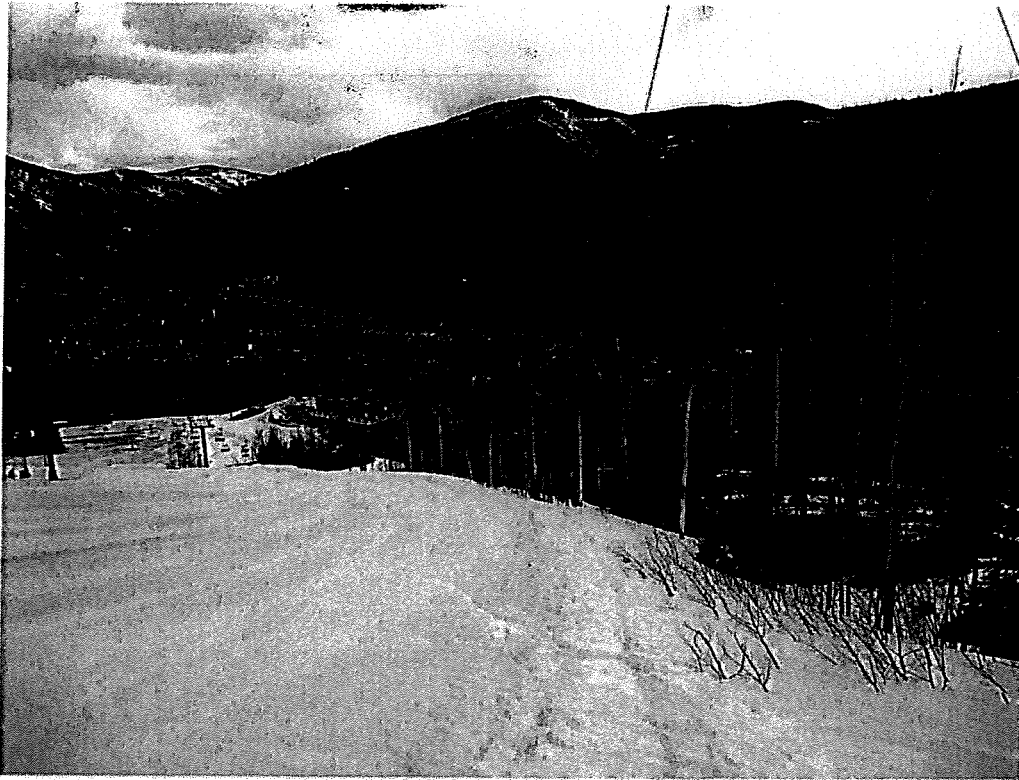
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Incised Drainage Channel Above Northwoods



Proposed Mogul Course Location



Ski Trial/Mogul Course Boundary



Golden Peak Improvement Area (left of existing ski run)

NORTHWOODS CONDOMINIUM ASSOCIATION

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# Resume

JOHN D. MECHLING, P.E.  
Senior Principal Engineer

## EDUCATION

A.A.S. Civil Engineering  
University of New York at Delhi, 1976  
B.S. Civil Engineering  
University of Colorado at Denver, 1984

## PROFESSIONAL REGISTRATION

Registered Professional Engineer,  
Colorado No. 27429, Utah No. 1191309110  
Montana No. 38739PE, Idaho No. 16483  
Texas No. 126036

## PROFESSIONAL SOCIETIES

American Society of Civil Engineers (ASCE),  
Associate Member  
American Society of Foundation Engineers (ASFE),  
Associate Member  
International Association of Foundation Drilling (ADSC),  
Technical Member  
Deep Foundations Institute (DFI)

## TRAINING & CERTIFICATIONS

University of Wisconsin, Madison College of Engineering;  
Slope, Stability and Landslide, February 1997  
University of Florida; Dewatering Systems Short Course,  
American Society of Engineers;  
Slope Stability Analysis, March 2002  
International Association of Foundation Drilling,  
Anchored Geo-Support Seminar, March 2002  
International Association of Foundation Drilling; Micropiles

## PROFESSIONAL SUMMARY

Mr. Mechling joined with CTL | Thompson in 1978. Mr. Mechling's responsibilities include the overall operations of our Glenwood Springs, Colorado branch office. Additionally, he is responsible for developing client relations, financial accountability, and the supervision of Geotechnical Engineers.

Mr. Mechling's expertise consists of slope stability analysis, excavation and slope retention, and construction dewatering. Some of the types of projects he has worked on are, mountain resort developments, earth dams and reservoirs, water and waste water facilities, schools, and roadways.

Mr. Mechling has been recognized as an expert by the State of Colorado in geotechnical engineering and slope stability.

## PROJECT EXPERIENCE

**Roaring Fork Transportation Agency (RFTA), Glenwood Springs, Colorado** - The Bus Maintenance Facility, originally built on spread footings on soils from a 100' deep debris fan, had settled significantly. We served on the MW Golden Constructors design-build team to investigate the cause, design a repair, and construct the repairs. We determined the cause of the settlements, evaluated alternative solutions, and, in conjunction with cost estimating efforts by MW Golden, determined that underpinning by compaction grouting was the appropriate solution for this distressed building. We consulted in the design of the foundation underpin repair along with numerous structural repairs to the masonry walls, concrete slabs-on-grade, concrete structural slabs, and interior below grade water tanks. The repairs, which included lifting the lowest portions of the building, were installed in 2010.

# Resume

JOHN D. MECHLING, P.E.  
Senior Principal Engineer

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**Glenwood Springs Municipal Operations Center, Glenwood Springs, Colorado** – We are providing geotechnical engineering consultation to the City of Glenwood Springs Public Works Department to evaluate settlement of floors and wall at the building. Work product included drilling of exploratory borings and laboratory testing, evaluation of the cause of distress and remediation.

**Snowmass Creek Road Stabilization Project, Pitkin County, Colorado** - Mr. Mechling was the Principal Engineer and member of the design team. The project involved design of a reticulated micropile wall and cap beam system to stabilize the downhill shoulder of the road above Snowmass Creek. The wall as 160 feet long with micropile lengths of 30 feet.

**Aspen Community School, Pitkin County, Colorado** - Mr. Mechling was the Principal Engineer and designer of a two tiered soil nail earth retention system. Wall height was as tall as 20 feet and the wall was 200 feet long.

**Solaris, Vail, Colorado** - Mr. Mechling performed aquifer pump testing and was a team member in the design of construction dewatering system. The dewatering system was as deep as 40 feet and consisted of a well point system. Dewatering at the site was as much as 2,800 gallons per minute

**Farmers Korner Wastwater Treatment Plant, Summit County, Colorado** - Mr. Mechling was the Principal Engineer in charge. The project was an expansion including several buried structures. The larges structures were a 70 foot diameter clarifier and 50 feet by 100 feet aeration basin. Excavations were to 15 feet below grad and below water.

**Aspen Highlands Base Village in Aspen, Colorado** - Project Engineer during Engineering Consultation phase of the project, the project involved the construction of a large underground parking structure with several buildings on the garage deck. The Structure location was at the transition of the valley floor to steep ski slopes. Well point and interceptor drains were used to dewater the site and soil anchors, soil nails and continuous pile wall were used to retain excavations and stabilize the hillside.

**The Timbers at Snowmass, Snowmass Village, Colorado** - Project Engineer during Engineering Consultation phase of the project, the project involved the construction of a large underground parking structure with several buildings on the garage deck. The Timbers Club at Snowmass consists of eight buildings containing 36 three-bedroom luxury residences, four townhomes and clubhouse facilities. The Structure location was at the transition of the valley floor to steep ski slopes. Well point and interceptor drains were used to dewater the site and soil anchors, soil nails and continuous pile wall were used to retain excavations and stabilize the hill side.

**Summit Reservoir in Keystone, Colorado** - Project Manager during the construction of a large earth dam and reservoir at near 11,000 feet elevation. The project comprised of varied subsurface soil conditions including soft soil to cemented bedrock. The remote location required manufacturing of material via on-site crushing of rock and selective usage of various soils.

**Prospect at Crested Butte in Crested Butte, Colorado** - Project Manager during the construction of three levels of below grade parking adjacent to existing ski area mall. The project entailed retention systems using a combination of soil nails and soil anchors, mechanically stabilized earth (MSE), and gravity was used in the preliminary design.

**City Market Center in Vail, Colorado** - Project Manager during the construction of a large underground parking structure with several buildings on garage deck. The project involved well point and interceptor drains to dewater the site. Additionally, soil anchors, soil nails, continuous pile walls were used to retain excavations.

# Resume

JOHN D. MECHLING, P.E.  
Senior Principal Engineer

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## PUBLICATIONS

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"Geotechnical Engineering of Remediation of Structures on Collapsing Soils", presented ASCE GEO-SEI Congress 2016, Phoenix, Arizona.



## ATTACHMENT TO RESUME

1. A copy of my resume is included to establish my qualifications as an expert witness in this case.
  - Deposition as factual witness was given in Class Action Suite, Home Owners vs. Mission Viejo  
  
Plaintiff's Attorney - Scott Sullan, 5290 DTC Parkway, Greenwood Village, CO 80111 (303-779-0077); Case number not know at this writing.
  - Expert witness testimony was given in Herrera vs. Ptarmigan Estates  
  
Plaintiff's Attorney - Hall & Evans, L.L.C., 1200 17<sup>th</sup> Streets, Suite 1700, Denver, CO 80202 (303-628-3300); Cast No. 99CV 143.
  - Deposition and testimony given in Terraces Condominiums Homeowners Association, Inc. vs. The Terrace Group LLC et al.  
  
Plaintiff's Attorney - Scott Sullan, 5290 DTC Parkway, Greenwood Village, CO 80111 (303-779-0077); Case number 03 CV 90.
  - Deposition was given in Chiappenelli vs. Helm Group LLC
  - Deposition was given in Tauber vs. Residence at Little Nell.
  - Expert witness testimony in Board of County Commissioners of Pitkin County, Colorado vs. David B Brothers and Marshall A Brothers: Case number 09 VC 85.
  - Expert report for Yenter Companies. Yenter attorney Harris, Karstaedt, Jamison & Powers, P.C.: Case NO. 2011 CV 140, Div. 3.
  - Expert report for Wolf Slatkin & Madison, P.C. Sopris Lodging, LLC and Sopris Suites, LLC, Courtyard by Marriott and Residence Inn. Case No. 2013CV30033,
  - Expert report for Balcomb and Green PC – Adams V. Lazy Dog Properties, LLC, Simpson Access Road Bridge, 3901 County Road 241, Garfield County, Colorado.
  - Expert report for Fowler, Schimberg and Flanagan, PC. Ironbridge, Case No. 2010CV142.
2. Mr. John Mechling's fee for expert witness services is \$200/hour when not in court. A fee of \$230/hour is charged for each hour of expert witness services during the presentation of testimony.



# Resume

JAMES D. KELLOGG, P.E.

Division Manager, Glenwood Springs

## EDUCATION

B.S. Biology  
Virginia Polytechnic Institute and State University

M.S. Civil Engineering  
Virginia Polytechnic Institute and State University

## PROFESSIONAL REGISTRATION

Registered Professional Engineer  
Colorado No. 38298

## TRAINING & CERTIFICATIONS

ASFE Fundamentals of Project Management  
ASFE Project Manager Training Program  
CDWR – Hazard Classification and Flood Hydrology

## PROFESSIONAL SOCIETIES

American Society of Civil Engineers, Associate Member

## PROFESSIONAL SUMMARY

James D. Kellogg is the Division Manager of the Glenwood Springs Division. Mr. Kellogg joined the CTL|Thompson, Inc. team in 1997 and worked on numerous commercial, industrial, and municipal projects until leaving the firm in 2006. He worked as the lead hydrographer and augmentation plan coordinator for the Division 5 office of the Colorado Division of Water Resources from December 2006 through August 2015. In September 2015, Mr. Kellogg returned to CTL | Thompson, Inc.

Mr. Kellogg has diverse professional experience. His geotechnical engineering experience includes slope stability analysis, excavation retention, dewatering systems, underpinning, expansive and consolidating soils. He also has experience in water resource engineering including hydrography, satellite monitoring, augmentation plan administration, water use accounting, and select dam safety tasks.

## GEOTECHNICAL ENGINEERING EXPERIENCE

Geotechnical Engineer for East Trade Parcel in Mt. Crested Butte, Colorado. Roads were planned on mountain side with unstable slopes and significant ground water. This included performing slope stability analyses, evaluated road constructability, and provided recommendations for earthwork, excavation retainage, and dewatering.

Geotechnical Engineer for North Village in Mt. Crested Butte, Colorado. This project included commercial and residential development planned at a base of a steep mountain slope with remnant landslide. This included performing slope stability analysis and developed recommendations for site development.

Geotechnical Engineer for Westwall Lodge in Mt. Crested Butte, Colorado. This project involved developing recommendations for dewatering, excavation retainage, and foundations for a multi-story lodge with below grade parking levels at base of a ski area. The project site presented significant ground water flows and caving spoils present.

# Resume

JAMES D. KELLOGG, P.E.

Division Manager, Glenwood Springs

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Geotechnical Engineer for Aspen High School Addition in Aspen, Colorado. This project included an irregular-shaped addition that was planned on a building pad constructed with a cut/fill balance. Evaluated potential building movement and developed geotechnical recommendations for structural fill and construction of foundations.

Geotechnical Engineer for Aspen Recreation Center in Aspen, Colorado. This project involved providing consultation regarding mitigation of ground water flow into the excavation for the community center which included a pool, ice rink, and tall foundation walls. This required evaluation of deep cuts, large foundation loads, and frost protection for sub grade soils below the ice rink.

Geotechnical Engineer for Vail Valley Medical Center Addition in Vail, Colorado. This project involved the demolition and renovation of central part of hospital facility. This project included geotechnical recommendations for new column pads to support additional upper levels; provided consultation for jet grouting operations to increase capacity to existing column pads.

Geotechnical Engineer for Vail Town Center in Vail, Colorado. The project included the demolition of existing parking structure and construction of new parking structure with several levels of below-grade parking and commercial facilities on upper deck. This involved the evaluation of soil and ground water conditions to provide the assessment of required dewatering and excavation retention systems; additionally, the project required specialized drilling techniques to advance borings.

Geotechnical Engineer for Dancing Bear Lodge in Aspen, Colorado. This project involved a four-story building with three below-grade levels planned adjacent to other buildings and infrastructure. The primary geotechnical concern was excavation retention systems. This included developing recommendations for temporary and permanent retention concepts.

## WATER RESOURCE ENGINEERING EXPERIENCE

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Augmentation Plan Coordinator, Colorado Division of Water Resource, Division 5, Glenwood Springs, Colorado

- Reviewed water court decrees, engineering reports, and supporting documentation.

- Evaluated complex water use accounting spreadsheets.

- Assessed field operation of augmentation plans.

- Coordinated meetings with water users, engineers, and attorneys.

Hydrographer, Colorado Division of Water Resource, Division 5, Glenwood Springs, Colorado

- Installed electronic gage height sensors and satellite monitoring equipment.

- Operated and maintained streamflow gaging stations.

- Performed streamflow discharge measurements at high and low flows.

- Developed annual streamflow records for publication.